



UNITED STATES PATENT AND TRADEMARK OFFICE

len
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,161	11/22/2005	Jun Takahashi	529.44608X00	9286
20457 7590 06/28/2007 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EXAMINER SONG, HOON K	
			ART UNIT 2882	PAPER NUMBER
			NOTIFICATION DATE 06/28/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

officeaction@antonelli.com
dprater@antonelli.com
tsampson@antonelli.com

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/527,161</p>	<p>Applicant(s)</p> <p align="center">TAKAHASHI ET AL.</p>	
	<p>Examiner</p> <p align="center">Hoon Song</p>	<p>Art Unit</p> <p align="center">2882</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-13,16-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed:
- 6) ☒ Claim(s) 1,3-13,16-19 and 21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/18/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "a non-resonant" as claimed in claim 1 is not described in the specification.

Claim Objections

Claims 3 and 20 are objected to because of the following informalities:

In claim 3 at line 1, "claim 2" should read --claim 1--.

There is no claim 20. Numbering of the claims is wrong.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-13, 16-19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1 at line 2, the term "non-resonant" is not clear. The term "non-resonant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention; at line 20, "the plural currents" lacks proper antecedent basis; at line 21, "the plural windings lacks proper antecedent basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi medical corporation (JP5-307998) in view of Dean et al. (US 5128592).

Regarding claims 1, 5-9 and 13, Hitachi medical corporation teaches an X-ray generating device comprising:

an inverter for converting a voltage supplied from a DC power supply into a high-frequency AC voltage;

a high voltage transformer for boosting an AC power voltage including a plurality of primary windings (4a) connected in parallel to an AC power supply, at least one iron core, and a plurality of secondary windings (4b) respectively corresponding to the primary windings;

a plurality of high voltage rectifier circuits (7) which are connected to outputs of the plurality of secondary windings of the high voltage transformer and converts the outputs into DC outputs, connects the DC in series, and grounds the midpoints of the series connection at a neutral point;

and an X-ray tube (12) receiving a predetermined tube voltage through a cathode and an anode thereof, respectively connected to a DC output negative terminal and a DC output positive terminal on both ends of the plurality of high voltage rectifier circuits,

Art Unit: 2882

wherein a ratio obtained by dividing a plurality of values of currents respectively flowing through the plurality of primary windings each other at an identical time point is always kept at a predetermined ratio while the tube voltage is applied, wherein a waveform phase difference removing is provided to remove a difference in wave and phase occurring between the plural currents respectively flowing through the plural windings and to remove an unbalanced voltage (paragraph 007).

However Hitachi medical corporation fails to teach the inverter is a non-resonant inverter.

Dean teaches a non-resonant inverter.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the inverter of Hitachi medical corporation with non-resonant inverter as taught by Dean since the inverter would provide more stable system.

Hitachi medical corporation fails to teach the x-ray source is used in CT system.

A CT system having an x-ray source is known

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the x-ray source of Hitachi medical corporation with the known CT system since the source would provide more stable system.

Allowable Subject Matter

Claims 3-4, 10-12 and 16-19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3-4 and 19, the prior art fails to teach the waveform phase difference removing means has a hollowed core made of a ferromagnetic material of large permeability, and a part of plural conductors connecting the primary windings and the AC power supply passes through or turns around the hollow, and differences in waveforms and phases are removed by mutually canceling magnetic fields generated due to the primary winding currents as claimed in claim 3.

Regarding claims 10-12 and 16-18, the prior art fail to teach waveform phase difference removing means which lowers the predetermined ratio to be smaller than 1 and removes differences in waveform and phase generated between the plural currents respectively flowing through the plurality of primary windings; and current addition means formed by commonly winding two or more conductors among the plural conductors respectively connecting the plurality of primary windings and the AC power supply around the ferromagnetic core having a large permeability, wherein the ratio between the plural current values is kept at a predetermined ratio by the waveform phase difference removing means and the current addition means as claimed in claim 10.

Response to Arguments

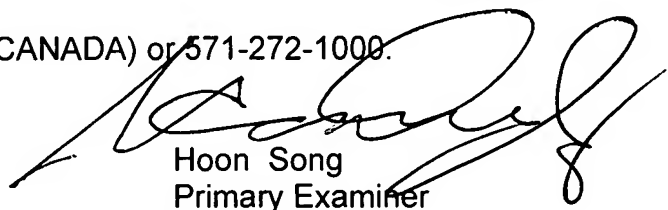
Applicant's arguments with respect to claims 1, 5-9 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 9:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hoon Song
Primary Examiner
Art Unit 2882

HKS